LISTING OF THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Previously Presented) A regenerative braking system for a vehicle, comprising:

a displacement on demand (DOD) engine including cylinders;

a battery;

an electric machine that has motor and generator modes and that is selectively driven by a wheel of said vehicle; and

a controller that detects a braking condition of said vehicle, that deactivates at least one of said cylinders while maintaining at least another of said cylinders active in response to said braking condition, that operates said electric machine in said generator mode during said braking condition to charge said battery, and that monitors a vehicle speed and activates at least one of said cylinders when said vehicle speed achieves a threshold.

2. (Cancelled)

3. (Previously Presented) The regenerative braking system of claim 1 wherein said controller detects termination of said braking condition and activates all of said cylinders in response to said termination.

4. (Cancelled)

5. (Original) The regenerative braking system of claim 1 wherein said controller selectively operates said electric machine in said motor mode to drive said wheel.

6. (Original) The regenerative braking system of claim 1 wherein said controller selectively deactivates all of said cylinders of said engine and operates said electric machine in said motor mode to drive said wheel.

7. (Cancelled)

8. (Previously Presented) A method of charging and discharging a battery in a vehicle, comprising:

detecting a braking condition of said vehicle;

deactivating at least one cylinder of an engine in response to said braking condition while maintaining at least another cylinder of said engine active;

driving an electric machine in a generator mode with a wheel of said vehicle to charge said battery; and

monitoring a vehicle speed and activating at least one of said cylinders when said vehicle speed achieves a threshold.

9. (Previously Presented) The method of claim 8 further comprising:

activating said electric machine in a drive mode to drive said wheel.

10. (Original) The method of claim 9 further comprising providing electrical current to said electrical machine from said battery.

11. (Cancelled)

12. (Previously Presented) The method of claim 8 further comprising:

detecting termination of said braking condition; and

activating said at least one cylinder in response to said termination.

13. (Previously Presented) A method of operating a vehicle having a regenerative braking system, comprising:

detecting a braking condition of said vehicle;

deactivating a cylinder of an engine in response to said braking condition while maintaining at least another cylinder of said engine active;

retarding motion of said vehicle by driving an electric machine in a generator mode with a wheel of said vehicle to generate electrical current;

monitoring a vehicle speed; and

activating at least one of said cylinders and relieving said retarding when said vehicle speed achieves a threshold.

14. (Original) The method of claim 13 further comprising charging a battery with said electrical current.

15. (Previously Presented) The method of claim 13 further comprising:

activating said electric machine in a drive mode to drive said wheel.

16. (Previously Presented) The method of claim 15 further comprising providing electrical current to said electric machine from a battery.